

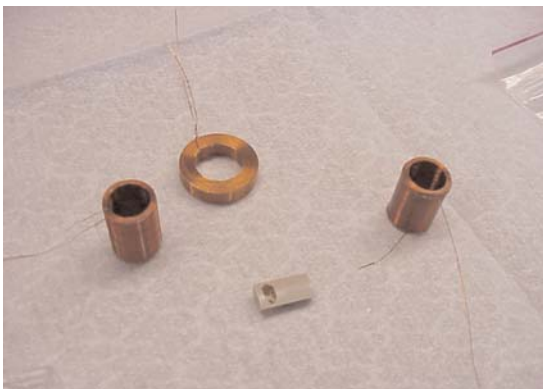
# Magnetics Laboratory

## Manufacturing Technologies

The Magnetics Lab provides customers with design, prototyping, packaging solutions and production of unique magnetic and resistive components from millivolts to extremely high voltage (250KV) components.

### Capabilities

- Design review of specification and requirements
- Design and develop from sketches, verbal ideas, or circuit design parameters
- Coil windings of any size or configuration
- Coil diameter from 0.1 to 24 inches



*Self supported encapsulated coils*

- Low temperature and high temperature coils
- Precision resistors from 0.1 ohms to 2 megaohms (non-inductive)
- Special high voltage transformers (2KV to 250KV) and high voltage loads (38K ohms to 100K ohms and 2KV to 250KV)



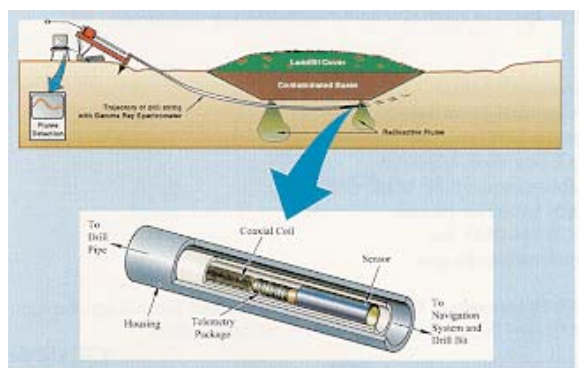
*Mold with Encapsulated High Voltage Test Transformer*

### Resources

- Computer Aided Mechanical Design (Solid Works 3D CAD System) for mechanical designs (Molds, Mandrels and other component packaging systems)
- Titan Magnetic Design and National Arnold Magnetic Design Software
- Concurrent engineering in prototype and production manufacturing
- Programmable winding machines (Bobbin and Toroidal winders)
- Automated winding with various sizes of copper wire (55 gauge to 1 gauge round, square, and rectangular wire)

## Accomplishments

- Patented an apparatus for down hole drilling communications and created a method for making and using the same. The apparatus assists in obtaining high data rate measurements during down hole drilling operations by allowing for the extension of communications wire from subsurface sensors to surface monitoring equipment.



### *Downhole Drilling Apparatus*

- High Voltage Transformers for different firing sources (down hole sensor drivers and Electronic Generator drivers)
- High Voltage Resistor design for production tester systems

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